means by which a system user or subscriber may experience services from an access network, such as a mobile phone or smart phone, a personal digital assistant PDA, or computer, or a device having a corresponding functionality, such as a modem chipset, a chip, a module etc., which can also be part of a UE or attached as a separate element to a UE, or the like;

[0101] method steps likely to be implemented as software code portions and being run using a processor at a network element or terminal (as examples of devices, apparatuses and/or modules thereof, or as examples of entities including apparatuses and/or modules therefore), are software code independent and can be specified using any known or future developed programming language as long as the functionality defined by the method steps is preserved;

[0102] generally, any method step is suitable to be implemented as software or by hardware without changing the idea of the invention in terms of the functionality implemented;

[0103] method steps and/or devices, units or means likely to be implemented as hardware components at the above-defined apparatuses, or any module(n) thereof, (e.g., devices carrying out the functions of the apparatuses according to the embodiments as described above, eNode-B etc. as described above) are hardware independent and can be implemented using any known or future developed hardware technology or any hybrids of these, such as MOS (Metal Oxide Semiconductor), CMOS (Complementary MOS), BiMOS (Bipolar MOS), BiCMOS (Bipolar CMOS), ECL (Emitter Coupled Logic), TTL (Transistor-Transistor Logic), etc., using for example ASIC (Application Specific IC (Integrated Circuit)) components, FPGA (Field-programmable Gate Arrays) components, CPLD (Complex Programmable Logic Device) components or DSP (Digital Signal Processor) components;

[0104] devices, units or means (e.g. the above-defined apparatuses, or any one of their respective means) can be implemented as individual devices, units or means, but this does not exclude that they are implemented in a distributed fashion throughout the system, as long as the functionality of the device, unit or means is preserved;

[0105] an apparatus may be represented by a semiconductor chip, a chipset, or a (hardware) module comprising such chip or chipset; this, however, does not exclude the possibility that a functionality of an apparatus or module, instead of being hardware implemented, be implemented as software in a (software) module such as a computer program or a computer program product comprising executable software code portions for execution/being run on a processor;

[0106] a device may be regarded as an apparatus or as an assembly of more than one apparatus, whether functionally in cooperation with each other or functionally independently of each other but in a same device housing, for example.

[0107] It is noted that the embodiments and examples described above are provided for illustrative purposes only and are in no way intended that the present invention is restricted thereto. Rather, it is the intention that all variations and modifications be included which fall within the spirit and scope of the appended claims.

1. An apparatus comprising
at least one interface unit configured to provide connection to at least one network, and
a processor configured
to receive a packet via the at least one interface unit,
to detect a service identification in the packet,
to decide based on the detected service identification whether a tunnel protocol extension header is to be generated or not, and,
when the tunnel protocol extension header is to be generated, to generate the tunnel protocol extension header, to encapsulate the received packet with the generated tunnel protocol extension header and to forward the encapsulated packet.

2. The apparatus according to claim **1**, wherein the processor is configured to
to decide whether a tunnel protocol extension header is to be generated or not by referring to a predefined list of service identifications.

3. The apparatus according to claim **2**, wherein the list comprises a content of a tunnel protocol extension header for a service identification.

4. The apparatus according to claim **2**, wherein a plurality of predefined lists are provided, and the processor is configured
to select an appropriate list of the plurality of predefined lists based on an access point name involved in a session in which the packet is received.

5. The apparatus according to claim **1**, wherein the processor is configured
to decide based on the access point name involved in a session either to decide based on the detected service identification whether a tunnel protocol extension header is to be generated or not, or not to generate any tunnel protocol extension.

6. The apparatus according to claim **1**, wherein the processor is configured
to replace the detected service indication with a default service indication.

7. The apparatus according to claim **1**, wherein
the service identification comprises a DSCP value and/or
the tunnel protocol extension header is a GTP-U extension header.

8. An apparatus comprising
an interface unit configured to provide connection to a network, and
a processor configured
to receive a packet via the interface unit,
to detect whether the packet relates to a specific application, and,
when it is detected that the packet relates to the specific application, to insert a service identification in the packet based on the application, or,
when it is detected that the packet does not relate to a specific application, to insert a default service identification in the packet.

9. The apparatus according to claim **8**, wherein the specific application is a predefined application which requires special treatment such as providing a specific bandwidth, a specific data rate, a specific quality of service class, resource reservation for a specific duration, and/or a specific routing for the packet.